

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P/63927/J64		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/051688		International filing date (day/month/year) 02.08.2004	Priority date (day/month/year) 02.08.2003	
International Patent Classification (IPC) or national classification and IPC H04B10/08, G02B6/34				
Applicant MARCONI COMMUNICATIONS GMBH et al				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 1 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 02.05.2005		Date of completion of this report 29.06.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Shaalan, M Telephone No. +49 89 2399-7723		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/051688

Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-8 as originally filed

Claims, Numbers

5-7 as originally filed

1-4 received on 02.05.2005 with letter of 28.04.2005

Drawings, Sheets

1/2-2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/051688

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	1-7
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: WO 99/65174 A (BAROZZI GIANPAOLO ; MELI FAUSTO (IT); AINA STEFANO (IT); PIRELLI CAVI) 16 December 1999 (1999-12-16)
- D2: SHINJI MATSUOKA ED - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "SUPERVISORY SIGNAL TRANSMISSION METHODS FOR OPTICAL AMPLIFIER REPEATER SYSTEMS" COMMUNICATIONS : CONNECTING THE FUTURE. SAN DIEGO, DEC. 2 - 5, 1990, PROCEEDINGS OF THE GLOBAL TELECOMMUNICATIONS CONFERENCE AND EXHIBITION(GLOBECOM), NEW YORK, IEEE, US, vol. VOL. 3, 2 December 1990 (1990-12-02), pages 1846-1850, XP000218888 ISBN: 0-87942-632-2
- D3: DE 198 29 227 A (SIEMENS AG) 3 February 2000 (2000-02-03)

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

a wavelength-selective optical signal processing unit comprising an outcoupling filter (673, 678) for decomposing an incoming wavelength multiplex (671) comprising a plurality of channels at different wavelengths into a first (676) and a second group (678) of channels, a processing unit (page 18, lines 5-8) for carrying out a processing of the first group, and an incoupling filter (674) for combining the processed first group and another group into an outgoing wavelength multiplex (672), the outcoupling filter (673, 678) and the incoupling filter (674, 678) have a common continuous wavelength-selective reflecting structure (678), which reflects the first group from the incoming multiplex into a first direction (676) and lets the second group pass (678-674) and which reflects the first group arriving from a second direction (677-674-678)

The subject-matter of the claim therefore differs from this known wavelength-selective optical signal processing unit in that the continuous wavelength-selective reflecting structure reflects the first group arriving from a second direction (677-674,678) after having passed through the processing unit into the passing direction of the second group and that an incoupling filter (674) for combining the processed first group and the second group into an outgoing wavelength multiplex (672).

The problem to be solved by the present invention may therefore be regarded as "to modify the wavelength-selective optical signal processing unit in order to process the dropped channel information.

The solution proposed in the claim of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

The processing unit is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed, given the hint in D1, page 18, lines 5-8.

Also that an incoupling filter (674) for combining the processed first group and the second group into an outgoing wavelength multiplex (672) is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

Dependent claims 2-7 do not contain any features which, in combination with the features of any claim to which it/they refer, meet the requirements of the PCT in respect of inventive step, see document D2 and the corresponding passages cited in the search report.

CLAIMS

1. A wavelength-selective optical signal processing unit comprising an outcoupling filter (1) for decomposing an incoming wavelength multiplex comprising a plurality of channels at different wavelengths into a first and a second group of channels, a processing unit (14) for carrying out a processing of the first group, and an incoupling filter (1) for combining the processed first group and the second group into an outgoing wavelength multiplex, characterized in that the outcoupling filter (1) and the incoupling filter (1) have a common continuous wavelength-selective reflecting structure, which reflects the first group from the incoming multiplex into a first direction and lets the second group pass and which reflects the first group arriving from a second direction after having passed through the processing unit (14) into the passing direction of the second group.
2. The signal processing device of claim 1, characterized in that the wavelength-selective structure is a Bragg grating (7).
3. The signal processing device of claim 1, characterized in that the wavelength-selective reflecting structure is a dichroic mirror.
4. The signal processing device according to any one of the preceding claims, characterized in that it is provided for a wavelength multiplex having a plurality of information channels and at least one supervisory channel (OSC), that the at least one supervisory channel forms the first group and that the information channels form the second group.